



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/597,185	08/19/2008	Yasushi Sugimoto	MIYOSH0007	7295

24203 7590 09/15/2011
GRIFFIN & SZIPL, PC
SUITE PH-1
2300 NINTH STREET, SOUTH
ARLINGTON, VA 22204

EXAMINER

DAVIS, TONY O

ART UNIT	PAPER NUMBER
----------	--------------

2629

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

09/15/2011

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

GandS@szipl.com
burke@szipl.com

Office Action Summary	Application No. 10/597,185	Applicant(s) SUGIMOTO ET AL.	
	Examiner TONY DAVIS	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) ☒ Claim(s) 1-21 is/are pending in the application.
- 5a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 6) ☐ Claim(s) ____ is/are allowed.
- 7) ☒ Claim(s) 4-6, 9-21 is/are rejected.
- 8) ☐ Claim(s) ____ is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☒ The drawing(s) filed on 7/14/06 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/26/11, 6/21/11</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-21 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 4-6 and 9-21 are rejected under 35 U.S.C. 103(a)** as being **unpatentable** over **Applicant Admitted Prior Art**, hereinafter referred to as AAPA, **in view of Ohkawa (US 2002/0036729)**.

Regarding claim 4, AAPA teaches A backlight device (LCD device exhibited in fig 1-2) comprising:

(a) a light guide plate (1 of fig 1-2) that propagates, reflects and diffuses light, disposed at a rear surface side of a display device (paragraph 3-4 and 5-8, fig 1-2), wherein the light guide plate comprises

- i. an entry face (5 of fig 1-2) that light enters at one side of the light guide plate (paragraph 4, fig 1-2);

ii. an exit face (3 of fig 1-2) disposed on a side of the light guide plate adjacent to a liquid crystal display device (paragraph 5, fig 1-2); and

iii. a lower face (9 of fig 2) disposed opposing the side of the light guide plate nearest to the liquid crystal display device (paragraph 5, fig 2);

(b) a light source (2 of fig 1-2) disposed at least one end of the light guide plate (paragraph 3 and 5, fig 1-2); and

(c) a reflector (10 of fig 2) that comprises a structured face, wherein the reflector is disposed at the lower face of the light guide plate and reflects light from the light guide plate (paragraph 8, fig 2). **However, AAPA fails to teach** wherein the structured face includes an iteration of prism elements of trapezoidal section,; wherein a crest line direction of the prism elements is disposed orthogonal to the entry face of the light guide plate.

In a similar field of endeavor, Ohkawa discloses Guide plate, surface light source device and liquid crystal display. **In particular, Ohkawa teaches** wherein the structured face includes an iteration of prism elements of trapezoidal section (paragraph 89, 97, and 96, fig 4a-5); wherein a crest line direction of the prism elements is disposed orthogonal to the entry face of the light guide plate (paragraph 97, fig 5).

AAPA teaches the claimed invention except wherein the structured face includes an iteration of prism elements of trapezoidal section,; wherein a crest line direction of the prism elements is disposed orthogonal to the entry face of the light guide plate. Ohkawa teaches it is well known to one of ordinary skill in the art at the time of the invention wherein the structured face includes an iteration of prism elements of

Art Unit: 2629

trapezoidal section,; wherein a crest line direction of the prism elements is disposed orthogonal to the entry face of the light guide plate.

Therefore it would've been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of AAPA by incorporating the teachings of Ohkawa for the purpose of increased uniformed brightness, superior control of light propagation, and decreased unevenness in brightness appearing on the emission face of the light guide, as taught by Ohkawa (paragraph 17-19, and 41).

Regarding claim 5, AAPA teaches the backlight device according to claim 4, wherein the light guide plate has reflective elements integratedly formed on the exit face and the light guide plate that emits light rays by means of the reflective elements in the direction of the reflector adjacent to the lower face of the light guide plate (paragraph 8, fig 2).

Regarding claim 6, AAPA fails to teach the backlight device according to claim 5 wherein an anisotropic diffusion pattern is formed on the lower face of the light guide plate.

However, Ohkawa teaches the backlight device according to claim 5 wherein an anisotropic diffusion pattern is formed on the lower face of the light guide plate (paragraph 106, fig 5).

Therefore it would've been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of AAPA by incorporating the teachings of Ohkawa for the purpose of increased uniformed brightness, superior control of light

Art Unit: 2629

propagation, and decreased unevenness in brightness appearing on the emission face of the light guide, as taught by Ohkawa (paragraph 17-19, and 41).

Regarding claim 9, AAPA fails to teach the backlight device according to claim 4, wherein an anisotropic diffusion pattern is formed on the lower face of the light guide plate.

However, Ohkawa teaches the backlight device according to claim 4, wherein an anisotropic diffusion pattern is formed on the lower face of the light guide plate (paragraph 106, fig 5).

Therefore it would've been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of AAPA by incorporating the teachings of Ohkawa for the purpose of increased uniformed brightness, superior control of light propagation, and decreased unevenness in brightness appearing on the emission face of the light guide, as taught by Ohkawa (paragraph 17-19, and 41).

Regarding claim 10, AAPA fails to teach The backlight device according to claim 5, wherein the reflective elements comprise V-shaped grooves, wherein an inclined face of the grooves is directed to face light sources so that an angle of inclination of the inclined face brings light from the entry face gradually to a first angle below a second angle for total internal reflection.

However, Ohkawa teaches the backlight device according to claim 5, wherein the reflective elements comprise V-shaped grooves, wherein an inclined face of the grooves is directed to face light sources so that an angle of inclination of the inclined

Art Unit: 2629

face brings light from the entry face gradually to a first angle below a second angle for total internal reflection (paragraph 106, fig 5).

Therefore it would've been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of AAPA by incorporating the teachings of Ohkawa for the purpose of increased uniformed brightness, superior control of light propagation, and decreased unevenness in brightness appearing on the emission face of the light guide, as taught by Ohkawa (paragraph 17-19, and 41).

Regarding claim 11, AAPA fails to teach The backlight device according to claim 6, wherein the reflective elements comprise V-shaped grooves, wherein an inclined face of the grooves is directed to face light sources so that an angle of inclination of the inclined face brings light from the entry face gradually to a first angle below a second angle for total internal reflection.

However, Ohkawa teaches The backlight device according to claim 6, wherein the reflective elements comprise V-shaped grooves, wherein an inclined face of the grooves is directed to face light sources so that an angle of inclination of the inclined face brings light from the entry face gradually to a first angle below a second angle for total internal reflection (paragraph 106, fig 5).

Therefore it would've been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of AAPA by incorporating the teachings of Ohkawa for the purpose of increased uniformed brightness, superior control of light propagation, and decreased unevenness in brightness appearing on the emission face of the light guide, as taught by Ohkawa (paragraph 17-19, and 41).

Regarding claim 12, AAPA fails to teach The backlight device according to claim 4, wherein a rate of reflectivity of the reflector is not less than 75%, and a repetition cycle of the prism elements is 1-200 μm , and an angle formed by an oblique side of the trapezoidal section and a base thereof is 20-70° and a ratio of the sum of a length of an upper side of the trapezoidal section and a length of a gap between prism elements is a ratio in the range of 0.05-0.5 in relation to the repetition cycle of the prism elements.

However, Ohkawa teaches The backlight device according to claim 4, wherein a rate of reflectivity of the reflector is not less than 75%, and a repetition cycle of the prism elements is 1-200 μm , and an angle formed by an oblique side of the trapezoidal section and a base thereof is 20-70° and a ratio of the sum of a length of an upper side of the trapezoidal section and a length of a gap between prism elements is a ratio in the range of 0.05-0.5 in relation to the repetition cycle of the prism elements (paragraph 115, fig 6).

Therefore it would've been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of AAPA by incorporating the teachings of Ohkawa for the purpose of increased uniformed brightness, superior control of light propagation, and decreased unevenness in brightness appearing on the emission face of the light guide, as taught by Ohkawa (paragraph 17-19, and 41).

Regarding claim 13, Ohkawa teaches The backlight device according to claim 5, wherein a rate of reflectivity of the reflector is not less than 75%, and a repetition cycle of the prism elements is 1-200 μm , and an angle formed by an oblique side of the

Art Unit: 2629

trapezoidal section and a base thereof is $20-70^\circ$ and a ratio of the sum of a length of an upper side of the trapezoidal section and a length of a gap between prism elements is a ratio in the range of 0.05-0.5 in relation to the repetition cycle of the prism elements (paragraph 115, fig 6).

Therefore it would've been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of AAPA by incorporating the teachings of Ohkawa for the purpose of increased uniformed brightness, superior control of light propagation, and decreased unevenness in brightness appearing on the emission face of the light guide, as taught by Ohkawa (paragraph 17-19, and 41).

Regarding claim 14, Ohkawa teaches The backlight device according to claim 6, wherein a rate of reflectivity of the reflector is not less than 75%, and a repetition cycle of the prism elements is 1-200 μm , and an angle formed by an oblique side of the trapezoidal section and a base thereof is $20-70^\circ$ and a ratio of the sum of a length of an upper side of the trapezoidal section and a length of a gap between prism elements is a ratio in the range of 0.05-0.5 in relation to the repetition cycle of the prism elements (paragraph 115, fig 6).

Therefore it would've been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of AAPA by incorporating the teachings of Ohkawa for the purpose of increased uniformed brightness, superior control of light propagation, and decreased unevenness in brightness appearing on the emission face of the light guide, as taught by Ohkawa (paragraph 17-19, and 41).

Regarding claims 15-17, they are rejected for the same rationale as the rejection of claims 12—14, as the claims are exactly identical, only the dependency of the claims 15-17 varies.

Regarding claim 18, Ohkawa teaches the backlight device according to claim 4, wherein a height of the trapezoidal section of prism elements is constant (fig 9-10).

Therefore it would've been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of AAPA by incorporating the teachings of Ohkawa for the purpose of increased uniformed brightness, superior control of light propagation, and decreased unevenness in brightness appearing on the emission face of the light guide, as taught by Ohkawa (paragraph 17-19, and 41).

Regarding claim 19, Ohkawa teaches the backlight device according to claim 4, wherein a height of the trapezoidal section of prism elements is progressively decreasing (fig 6).

Therefore it would've been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of AAPA by incorporating the teachings of Ohkawa for the purpose of increased uniformed brightness, superior control of light propagation, and decreased unevenness in brightness appearing on the emission face of the light guide, as taught by Ohkawa (paragraph 17-19, and 41).

Regarding claim 20, AAPA teaches the backlight device according to claim 4, further comprising:

(d) an optical sheet (8 of fig 2) disposed above the exit face of the light guide plate, wherein the optical sheet has a flat upper face and a lower face (paragraph 7, fig

2). However, AAPA fails to teach wherein reflective grooves forming a continuous prism-shaped construction are disposed on the lower face of the optical sheet.

Ohkawa teaches wherein reflective grooves forming a continuous prism-shaped construction are disposed on the lower face of the optical (end face 32 or reflection member RF both of fig 4b) sheet (paragraph 91, fig 4b).

Therefore it would've been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of AAPA by incorporating the teachings of Ohkawa for the purpose of increased uniformed brightness, superior control of light propagation, and decreased unevenness in brightness appearing on the emission face of the light guide, as taught by Ohkawa (paragraph 17-19, and 41).

Regarding claim 21, Ohkawa teaches the backlight device according to claim 4, wherein the prism elements comprise a variety of prism films (fig 9-10).

Therefore it would've been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of AAPA by incorporating the teachings of Ohkawa for the purpose of increased uniformed brightness, superior control of light propagation, and decreased unevenness in brightness appearing on the emission face of the light guide, as taught by Ohkawa (paragraph 17-19, and 41).

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

Art Unit: 2629

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TONY DAVIS whose telephone number is (571)270-5586. The examiner can normally be reached on M-Th 7:30 a.m.-6 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Quan-Zhen Wang can be reached on 571-272-3114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2629

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/T. D./
Examiner, Art Unit 2629

/Quan-Zhen Wang/
Supervisory Patent Examiner, Art Unit 2629